A6

29.(amended) ~~The coated panel of claim 26~~ wherein each of said fifth and sixth thin films includes said transparent conductive coating thereon.

~~30.(amended) The coated panel of claim 23~~ wherein each of said fifth and sixth thin films includes said transparent conductive coating thereon.

A7

33.~~(amended) The coated panel of claim 18~~ wherein each of said first and second thin films includes said transparent conductive coating thereon.

Please add the following new claims:

~~51.~~ The coated panel of claim 19 wherein the material composition of said third thin film is the same as ~~the~~ material composition of said fourth thin film.

A8

52. The coated panel of claim 51 wherein the material composition of said third thin film is the same as the material composition of said fourth thin film; ~~and~~ wherein the material composition of said fifth thin film is the same as the material composition of ~~said sixth~~ thin film.

REMARKS

Receipt of the Office Action mailed October 9, 2002, in the above-identified patent application is respectfully acknowledged. Claims 1-33 remain in the application. Claims 34-50 have been cancelled without prejudice to Applicant's right to file a divisional application thereon since they are directed to the method which was not elected by Applicant for prosecution in the present application. In addition, claims 1, 8-10, 15, 18, 22, 29, 30 and 33 have been amended herein. Claims 7, 13, 14, 16 and 31 have been cancelled in view of the amendments to the above mentioned claims. In addition, new dependent claims 51 and 52 have been added herein. These amendments and new claims are fully supported by the application and no new matter has been added.

Further, the specification at page 2, lines 14 and 15 has been amended as set forth above to delete the incorporation by reference of the prior publication mentioned therein.

Reconsideration of the application and a Notice of Allowance is respectfully requested based on the above amendments and the following comments.

The Objection to the Specification

The Examiner objected to page 2, lines 10-16, as referring to a foreign publication and incorporating same by reference in the present application. Applicant has now deleted the incorporation of the publication by reference in the present application although reference to the publication in the specification is retained so that a reader of the patent which results from this application can obtain appropriate access thereto. Accordingly, in view of the above amendment to the specification, withdrawal of the objection to the specification is respectfully requested.

The Claim Rejections Under 35 U.S.C. § 112, Second Paragraph

The Examiner has also rejected claims 1-33 as originally filed under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention because those original claims allegedly failed to set forth specific compositions which would meet the physical characteristics defined in the claims.

Applicant respectfully traverses this rejection in view of the amendments to the claims as set forth above. As will be understood, claim 1, as amended, now defines a reduced glare, conductive coated panel comprising a transparent substrate having a first surface and a second surface, a first, multilayer stack disposed on the first surface of the substrate and comprising a plurality of transparent thin film layers, and a second multilayer stack disposed on the second surface of the substrate and comprising a plurality of transparent thin film layers. Each thin film layer in the first stack has a corresponding thin film layer in the second stack. The film thickness of any one of the thin film layers of the second stack is different from the thickness of the corresponding thin film layer of the first stack. At least one of the thin film layers of the first stack has a thickness greater than the thickness of the corresponding thin film layer of the second stack. The material composition of the corresponding layers in each of the first and second stacks is the same. The first stack comprises an outermost thin film layer spaced farthest away from the first surface. A transparent conductive thin film is included on the outermost thin film layer of the first stack and comprises a material selected from at least one of indium tin oxide, doped tin oxide, and

doped zinc oxide, whereby visible light transmission through the coated panel is increased as compared to the substrate coated only with the transparent conductive thin film.

In addition, claim 18 has been amended to define a reduced glare, conductive coated panel comprising a transparent substrate, a first transparent interference thin film disposed on the first surface of the substrate, and a second transparent interference thin film disposed on the second surface of the substrate. The first thin film corresponds to but has a thickness different from the second thin film. The material composition of the first thin film is the same as the material composition of the second thin film. A transparent conductive coating is included on the first thin film and is selected from at least one of indium tin oxide, doped tin oxide and doped zinc oxide, whereby visible light transmission through the coated panel is increased compared to the substrate coated only with the transparent conductive coating.

Claims 2-6, 8-12, 15 and 17 depend from amended claim 1 and define various aspects of the combination of claim 1, as amended, including refractive indices, specific materials of the various layers and the location and arrangement of the various layers.

Similarly, dependent claims 19-30, 32, 33 and new dependent claims 51 and 52 similarly define the arrangement of various layers defined in claim 18, as amended, as well as physical features of the various layers.

As amended, claims 1-6, 8-12, 15, 17-30, 32, 33, 51 and 52 are clear and definite and do distinctly claim the subject matter which Applicant regards as her invention in a manner which is not anticipated, taught or disclosed by any of the cited references as is set forth more fully below. Applicant's revised claims define specific combinations of features which are not indefinite and which are novel and unobvious. Therefore, in view of the amendments to the claims, it is respectfully submitted that the rejection thereof under 35 U.S.C. § 112, second paragraph, should be withdrawn.

The Claim Rejections Under 35 U.S.C. § 103(a)

The Examiner has also rejected claims 1-6, 8-12, 15, 17-30, 32 and 33 under 35 U.S.C. § 103(a) as being obvious to one skilled in the art over United States Patent No. 4,802,737 to Denton in view of Applicant's disclosure at page 1, lines 12-24. This rejection is respectfully traversed in view of the above claim amendments which clarify Applicant's invention with respect to Denton '737 and the Background of the Invention described by Applicant at page 1.

Denton '737 discloses an anti-reflection overlay device which is stated to reduce light reflection as seen by a viewer. Denton includes a section of etched glass proposed for use as an overlay for a picture frame including art work, the etched glass having a coating of non-reflection material on both its front and rear surfaces. The coatings are applied by dipping the etched glass in various solutions including a first solution of silicon hydroxide and titanium hydroxide followed by withdrawing the glass from the solution and heating same, a second solution of titanium hydroxide followed by withdrawal and heating, and a third solution of silicon hydroxide followed by withdrawal and heating at a first temperature range to dry the coating followed by baking at an elevated temperature. Denton states that an improved non-reflection overlay is produced, and that after passing through the non-reflective coating in Denton, the amount of light available for further reflection is also reduced. See column 2, lines 28-37.

However, Denton fails to disclose the elements of Applicant's amended claims 1 and 18, as well as the claims remaining dependent thereon, or produce the same results as Applicant's invention. As recognized by the Examiner, Denton fails to include film stacks on first and second sides of a substrate where the film thickness of any one of the film layers of the second stack is different from the thickness of the corresponding thin film layer of the first stack and at least one of the thin film layers of the first stack has a thickness greater than the thickness of the corresponding thin film layer of the second stack, all of which is set for in Claim 1, as amended. Moreover, Denton fails to disclose such thicknesses and arrangement where the material composition of the corresponding layers in each of the first and second stacks is the same. Further, Denton fails to disclose a transparent conductive thin film on the outermost thin film layer of the first stack, or on the second stack, or on both of the first and second stacks, especially where the transparent conductive thin film comprises a material selected from at least one of indium tin oxide, doped tin oxide, and doped zinc oxide. The result produced by Applicant's invention as defined in amended claims 1 and 18 and the claims dependent thereon is a result different from that obtained by Denton, namely, increased visible light transmission through the coated panel as compared to the substrate coated only with the transparent conductive thin film or coating. The result obtained in Denton '737 is, therefore, in contrast to the result obtained with Applicant's invention. Also, as recognized by the Examiner, Denton '737 fails to disclose the use or inclusion of any conductive coating, transparent or otherwise, in its overlay device. As such, there is no

suggestion or motivation in Denton '737 for including such a conductive thin film or coating, or for applying the device disclosed in Denton '737 in a manner where such conductive thin film or coatings would be required and used.

The Examiner attempts to overcome this lack of disclosure by referring to Applicant's Background of the Invention in her specification at page 1 which states that touch screens, digitizer panels or information displays make use of anti-reflective, thin film coatings or stacks to reduce or minimize glare while allowing optimal light transmission. It is further stated that the provision of a conductive coating on one side of a substrate including anti-reflective thin film stacks or coatings changes the optical characteristics of the substrate and can prevent maximized light transmission unless the anti-reflective thin films or stacks and conductive coating are properly designed for one another.

These statements in Applicant's specification do not suggest or teach Applicant's reduced glare, conductive coated panel as defined in Applicant's amended claims 1 or 18 or the claims dependent thereon. Applicant's Background of the Invention does not disclose, teach or suggest that it was previously known to combine a transparent conductive coating or thin film in the manner defined in Applicant's amended claims. In fact, Applicant's Background of the Invention does not say any particular arrangement of thin films with conductive coatings was known. As shown by Denton '737 or Fujii et al. 6,471,344 discussed below, the coated panels of Applicant's amended claims were not previously known or suggested.

Therefore, it is respectfully submitted that there is no motivation or suggestion for combining Applicant's Background of the Invention with the disclosure of Denton '737. Further, even if somehow combined, the statements in Applicant's Background of the Invention and the disclosure of Denton '737 continue to lack any disclosure, teaching or suggestion of Applicant's arrangement of thin film layers and transparent conductive thin film or coating in the manner set forth in Applicant's amended claims.

Even if a transparent conductive coating as disclosed in Applicant's Background of the invention was included in the device of Denton '737, Applicant's claimed differences in film thickness in combination with the material composition of corresponding layers of the first and second stacks being the same, together with a transparent conductive thin film or coating on the outermost layer of the first stack or on the first thin films as defined in claims 1 or 18, as amended, simply are not shown or suggested, especially with the

differing result of increased visible light transmission. Therefore, it is respectfully submitted that Applicant's amended claims define coated panels having different physical features from those set forth in either Denton '737 or Applicant's Background of the Invention and are not obvious to one skilled in the art since a different structure and result is claimed having advantages not disclosed, taught or suggested by any of the references relied on by the Examiner. Simply put, the differing structure and results obtained by Applicant as set forth in the amended claims would not have been obvious from the unconnected disclosures of Applicant's Background of the Invention and in Denton '737. There is no teaching or suggestion in any of the references for arranging the thin film layers, thicknesses and material compositions as set forth by Applicant in the amended claims, especially to produce the result of increased visible light transmission of the Applicant's reduced glare conductive coated panel.

With respect to dependent claims 8-10, their dependencies have been changed in view of the cancellation of claim 7. Claim 15 has been amended to define the second stack comprising an outermost thin film layer spaced farthest from the second surface and a transparent conductive thin film on that outermost thin film layer comprising a material selected from at least one of indium tin oxide, doped tin oxide and doped zinc oxide.

Dependent claims 22, 29, 30 and 33, which ultimately depend from amended claim 18, have all been amended to state that the transparent conductive coating is included on each of the third and fourth, or fifth and sixth, thin films as defined in other dependent claims from claim 18, as amended.

Finally, new claims 51 and 52 further define the material composition of the third and fourth thin films as being the same, and of the fifth and sixth thin films as being the same.

Accordingly, in view of the above amendments, it is respectfully submitted that claims 1-6, 8-12, 15, 17-30, 32, 33, as well as new claims 51 and 52, are not obvious in view of Denton '737 or Applicant's Background of the Invention taken alone or in any combination.

In addition, the Examiner rejected claims 22, 29, 30 and 33 under 35 U.S.C. § 103(a) over Denton '737 in view of Applicant's Background of the Invention taken further in view of United States Patent 6,411,344 to Fujii et al.

Careful review of Fujii '344 shows that it discloses a transparent touch panel having a pair of conductive substrates 3, 4 and a transparent conductive film 6 on one surface of each, the resulting transparent conductive substrates being arranged such that the transparent conductive films 6 face one another. See Fig. 1, for example. It is respectfully submitted that such disclosure does not disclose, teach or suggest the present invention.

The mere fact that Fujii et al. '344 discloses transparent conductive films as set forth above does not complete the lack of disclosure missing from Denton '737 or the statements in Applicant's Background of the Invention. There is no disclosure in Fujii et al. '344 for a reduced glare, conductive coated panel having first and second multilayer stacks or first and second thin films disposed on first and second surfaces of a transparent substrate, especially with a transparent conductive thin film on the outermost layer of the first stack, wherein the film thickness of one of the individual thin film layers in the second stack is different than the corresponding layer in the first stack, and wherein one of the thin film layers in the first stack has a thickness greater than the thickness of the corresponding layer of the second stack. Moreover, Fujii et al. '344 does not disclose such a coated panel with thin films as defined in Applicant's amended claims 1, 18 or the claims dependent thereon whereby visible light transmission through the coated panel is increased as compared to a substrate coated only with transparent conductive coating thin film. Rather, Fujii et al. '344 states that its result is improved contrast of the display and preventing reflection of external light, in part through the inclusion of a retardation film. The distinctly different structure and function of Fujii et al. '344 achieves its results differently as compared to Applicant's present invention as defined by the amended claims. Since there is no disclosure, teaching or suggestion for Applicant's invention as defined in the amended claims as set forth in Denton '737 or Applicant's Background of the Invention as explained above, Fujii et al. '344 fails to complete the lack of disclosure missing from, or provide any suggestion or motivation for modifying the structure of Denton '737 or Applicant's Background of the Invention. Accordingly, it is respectfully submitted that the inclusion of transparent conductive thin films or coatings as set forth in claims 16, 22, 29, 30 and 33 are not obvious in view of Fuji et al. '344, Denton '737 or Applicant's Background of the Invention taken alone or in any combination.

SUMMARY

For the above reasons, it is respectfully submitted that claims 1-6, 8-12, 15, 17-30, 32, 33, 51 and 52 are now in condition for allowance and a Notice of Allowance therefor is respectfully requested.

Respectfully submitted,

CATHERINE A. GETZ

By: Van Dyke, Gardner, Linn & Burkhart, LLP

1/9/03
Date

Donald S. Gardner

Donald S. Gardner
Registration No. 25 975
2851 Charlevoix Drive, S.E.
P.O. Box 888695
Grand Rapids, MI 49588-8695
(616) 975-5502

DSG/ram

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner	: Andrew T. Piziali
Group	: 1775
Applicant	: Catherine A. Getz
Serial No.	: 09/883,654
Filed	: June 18, 2001
For	: ENHANCED LIGHT TRANSMISSION CONDUCTIVE COATED TRANSPARENT SUBSTRATE AND METHOD FOR MAKING SAME

Commissioner for Patents
Washington, D.C. 20231

Dear Sir:

VERSION WITH MARKINGS TO SHOW CHANGES MADE

Responsive to the Office Action mailed October 9, 2002, please amend the above-identified application as follows:

In the Title:

Please amend the title of the application to read as follows:

--ENHANCED LIGHT TRANSMISSION CONDUCTIVE COATED TRANSPARENT SUBSTRATE--

In the Specification:

Please delete the paragraph at page 2, lines 6-16 and substitute the following paragraph therefor:

Alternately, thin film coatings making up anti-reflective stacks or multilayers can be applied by wet deposition processes including dip coating in which the substrate is dipped in a container of liquid solution while held in a position perpendicular to the solution surface. When cured such as by firing, such process results in substantially identical coatings of the same solution on either side of the substrate. Although angle dipping or dipping of a substrate in a solution when held at an angle to the solution surface is known [such as is described in "Investigations on the Angle-Dependent Dip Coating Technique (ADDC) for the Production of Optical Filters", N.J. Arfsten et al., Journal of Sol-Gel Science and Technology 8, 1099-1104 (1997) © Kluwer Academic Publishers], [the entire disclosure of which is hereby incorporated by reference herein),] such angle dipping has heretofore not been used to prepare an improved conductive coated transparent substrate as in the present invention.

In the Claims:

Please cancel without prejudice claims 7, 13, 14, 16, 31, and 34-50.

Please amend claims 1, 8-10, 15, 18, 22, 29, 30 and 33 as follows:

1.(amended) A reduced glare, conductive coated panel comprising:

a transparent substrate having a first surface and a second surface;

a first, multilayer[, antiglare, interference] stack disposed on said first surface of said substrate, said first stack comprising a plurality of transparent, thin film layers;

a second, multilayer[, antiglare, interference] stack disposed on said second surface of said substrate, said second stack comprising a plurality of transparent, thin film layers;

each thin film layer in said first stack having a corresponding thin film layer in said second stack;

[the first of said layers in said first stack positioned on said first surface and corresponding to the first of said layers in said second stack which is positioned on said second surface, the second of said layers in said first stack positioned on said first layer and corresponding to the second of said layers in said second stack which is positioned on said first layer of said second stack;]

the film thickness of any one of said thin film layers of said second stack being different than the thickness of said corresponding thin film layer of said first stack;

at least one of said thin film layers of said first stack having a thickness greater than the thickness of said corresponding thin film layer of said second stack [on said second surface]; [and]

the material composition of said corresponding layers in each of said first and second stacks being the same;

said first stack comprising an outermost thin film layer spaced farthest away from said first surface;

a transparent conductive thin film on said outermost thin film layer of said first stack, said transparent conductive thin film comprising a material selected from at least one of indium tin oxide, doped tin oxide, and doped zinc oxide;

[a transparent conductive coating on at least one of the thin film layer of said first stack which is spaced farthest away from said first surface and the thin film layer of said second stack which is spaced furthest away from said second surface;]

whereby visible light transmission through said coated panel is increased as compared to said substrate coated only with said transparent conductive [coating] thin film.

8.(amended) The coated panel of claim [7] 6 wherein said first layers in each of said first and second stacks are formed from a combination of silicon dioxide and titanium dioxide, each of said first layers having a refractive index at the sodium D line in the range of from about 1.5 to about 2.0.

9.(amended) The coated panel of claim [7] 6 wherein said second layers in each of said first and second stacks are formed from titanium dioxide, said second layers each having a refractive index at the sodium D line of at least about 2.0.

10.(amended) The coated panel of claim [7] 6 wherein said third layers in each of said first and second stacks are formed from silicon dioxide, said third layers each having a refractive index at the sodium D line of less than about 1.5.

15.(amended) The coated panel of claim 1 wherein said second stack comprises an outermost thin film layer spaced farthest from said second surface; and a transparent conductive [coating is] thin film on [the] said outermost thin film layer of said second stack [which is farthest from said second surface], said transparent conductive thin film on said second stack being selected from at least one of indium tin oxide, doped tin oxide, and doped zinc oxide.

18.(amended) A reduced glare, conductive coated panel comprising:

a transparent substrate having a first surface and a second surface;

a first, transparent, interference thin film disposed on said first surface of said substrate;

a second, transparent, interference thin film disposed on said second surface of said substrate;

said first thin film corresponding to but having a thickness different from said second thin film;

the material composition of said first thin film being the same as the material composition of said second thin film; and

a transparent conductive coating on [at least one of] said first thin film [and said second thin film], said transparent conductive coating being selected from at least one of indium tin oxide, doped tin oxide, and doped zinc oxide;

whereby visible light transmission through said coated panel is increased compared to said substrate coated only with said transparent conductive coating.

22.(amended) The coated panel of claim 19 wherein each of said third and fourth thin films includes [a] said transparent conductive coating thereon.

29.(amended) The coated panel of claim 26 wherein each of said fifth and sixth thin films includes [a] said transparent conductive coating thereon.

30.(amended) The coated panel of claim 23 wherein each of said fifth and sixth thin films includes [a] said transparent conductive coating thereon.

33.(amended) The coated panel of claim 18 wherein each of said first and second thin films includes [a] said transparent conductive coating thereon.

Please add the following new claims:

51. The coated panel of claim 19 wherein the material composition of said third thin film is the same as the material composition of said fourth thin film.

52. The coated panel of claim 51 wherein the material composition of said third thin film is the same as the material composition of said fourth thin film; and wherein the material composition of said fifth thin film is the same as the material composition of said sixth thin film.